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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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HM12/0914

EXAMINER

QAZI, S

ART UNIT

PAPER NUMBER

1616

2

DATE MAILED:

09/14/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/335,022

Applicant(s)

Monica Johannsen

Examiner

Sabiha Qazi

Group Art Unit

1616



☒ Responsive to communication(s) filed on Jun 17, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-6 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-6 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1616

**First Office Action on Merits**

*Invention: The instant invention is drawn to process of isolation of vitamin D from an isomeric mixture which comprises carrying out the separation by column chromatography using supercritical or liquid carbon dioxide.*

**Status of the Application**

Claims 1-6 are pending.

Claims 1-6 are rejected.

All claims are examined.

No claim is allowed.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (CA 113:198104, abstract of Zhongguo Yiyao Gongye Zazhi (1990), 21(6), 256-61) in view of Lee et al. (CA 124:105153, abstract of J. Microcolumn Sep. (1995), 7(5), 477-83).

The instant invention is drawn to process of isolation of vitamin D from an isomeric mixture which comprises carrying out the separation by column chromatography using supercritical or liquid carbon dioxide.

Zhang et al. teaches the separation of 6 isomers separated by using irradiation technique and the purification on silica column (stationary phase).

Instant claims differ from the reference in claiming the liquid CO<sub>2</sub> for separation by column chromatography using liquid CO<sub>2</sub>.

Lee et al. alleviates this deficiency by teaching the separation of coal tar vitamins and other related compounds. The enhance fluidity liquid mobile phase containing CO<sub>2</sub>/methanol/water are used in a column.

These references are combinable because they are from the same field of endeavor.

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It would have been obvious to one skilled in the art to combine the teachings of prior art supra to separate the vitamin D derivatives particularly when Zhang et al. teaches irradiation technique and the purification on silica column (stationary phase) and Lee et al. Teaches the use of liquid CO2 for separation.

One skilled in the art would find ample motivation from the prior art to separate vitamin D derivatives as instantly claimed for the reasons cited above.

Nothing unobvious to separate the vitamin D as instantly claimed by the process known in the art, unless any unexpected results are seen.

The determination to employ the size and shape of the silica gel particles (claim 4) and use as stationary phase in claim 3 and would have been within the skills of the one familiar with the art.

In the light of the forgoing discussion, the Examiner's ultimate legal conclusion is that the subject matter defined by the instant claims would have been obvious within the meaning of 35 U.S.C. 103(a).

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The data showing any unexpected results would overcome the above 35 U.S.C. 103(a) rejection.

**Telephonic Inquiry**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sabiha N. Qazi, whose telephone number is (703) 305-3910. The examiner can normally be reached on Monday through Friday from 8 a.m. to 6 p.m. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.



**Sabiha N. Qazi Ph.D.**

**Examiner, 1616**

**8/24/99**